

INVASIVE ASPERGILLOSIS IN INTENSIVE CARE UNITS: UNDERLYING CONDITIONS, CLINICAL PRESENTATION, MEDICAL IMAGING, AND MORTALITY

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INTRODUCTION. Invasive aspergillosis (IA) is a fungal infection particularly affecting immunocompromized hosts. In the past decade, however, several reports indicate an important occurrence rate of IA in apparently immunocompetent ICU patients. Little is known about the specific risk profile of ICU patients to develop IA.

OBJECTIVES. To describe characteristics and outcome in ICU patients with IA.

METHODS. We report an interim analysis of the AspICU project (www.aspicu.org), a multicenter (n=24) observational survey (Nov. 2006-Nov. 2009) of all ICU patients with a positive *Aspergillus* culture. IA was defined according to an algorithm that discriminates *Aspergillus* colonization from probable or proven IA [1].

RESULTS. At time of interim analysis 390 patients were included in the AspICU project. Of these, 183 cases (46.9%) were classified as IA (of which 44 proven and 139 probable IA). The lung was the most frequent site of infection (97.8%) and *A. fumigatus* the most common isolated species (93.0%). The median APACHE II score at admission was 26 (IQR 18-30) and the median SOFA score at time of diagnosis of IA was 9 (IQR 6-13). IA was generally diagnosed in medical ICUs (82.0%). The most

frequently observed co-morbid conditions or underlying diseases were COPD (37.2%), ARDS (19.0%), diabetes mellitus (13.7%), and chronic heart failure (8.7%). There were 26 patients (14.2%) with solid organ transplantation (12 liver, 7 kidney, 5 lung, and 2 heart transplants). Only 35.0% of patients had classical host factors as defined by the EORTC/MSG, such as neutropenia (6.6%), hemato-oncological malignancy treated with cytotoxic agents (8.7%), bone marrow transplantation (2.7%), or chronic use of corticosteroids (15.3%). Clinical signs suggestive for IA were dyspnea (63%), worsening respiratory insufficiency in spite of antibiotic therapy and ventilator support (56%), and fever refractory to at least 3 days of antibiotic therapy (34%). Medical imaging (either by CT or on Chest X-ray) showed non-specific infiltrates (72%), pleural fluid (26%), diffuse “ARDS-like” infiltrates (20%), nodules (21%), wedge-shaped infiltrates (5%), cavitation (4%), Halo sign (3%), and air crescent sign (2%). Mortality at 12 weeks after diagnosis was 69.8% in proven IA and 67.2% in probable IA.

CONCLUSIONS. IA in ICUs is associated with high mortality. Classical host factors and medical imaging suggestive for IA were rather rare. COPD is the most frequent frequent underlying condition.

REFERENCE(S). [1] Vandewoude K, Blot S, Depuydt P, Benoit D, Temmerman W, Colardyn F, Vogelaers D. Clinical relevance of *Aspergillus* isolation from respiratory tract samples in critically ill patients. Crit Care 2006; 10, R31.

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